

– providing a reaction chamber comprising an inlet zone, an outlet zone, and a heatable inner wall, wherein said inner wall of said reaction chamber is subjected to a controlled temperature gradient to cause a temperature increase from said inlet zone to said outlet zone of said reaction chamber;

– supplying a first gaseous or vapor phase composition disposed to provide a hydrolyzable glass precursor to said inlet zone of said reaction chamber;

– supplying water as a second gaseous or vapor phase composition to said inlet zone of the reaction chamber;

– reacting the water and the first gaseous or vapor phase composition in the reaction chamber to form an aerosol of glass particles;

– directing said aerosol along said reaction chamber and through said outlet zone of said reaction chamber onto a target on which the preform is formed; and

– depositing said aerosol on the target.

2. (Amended) Method according to claim 1 wherein a difference of temperature of at least about 100°C is provided from said inlet zone to said outlet zone of the reaction chamber.

8. (Amended) Method according to claim 1 wherein a temperature of an aerosol stream being directed through the reaction chamber increases from about 700°C at the inlet zone to about 1200°C at the outlet zone of said reaction chamber.